

Efficacy and safety of glucosamine, diacerein, and NSAIDs in osteoarthritis knee: a systematic review and network meta-analysis

Jatupon Kongtharvonskul, Thunyarat Anothaisintawee, Mark McEvoy, John Attia, Patarawan Woratanarat and Ammarin Thakkinstian

Abstract

Background: To conduct a systematic review and network meta-analysis of randomized controlled trials (RCTs) with the aims of comparing relevant clinical outcomes (that is, visual analog scores (VAS), total and sub-Western Ontario and McMaster Universities Osteoarthritis index (WOMAC) scores, Lequesne algofunctional index, joint space width change, and adverse events) between diacerein, glucosamine, and placebo.

Method: Medline and Scopus databases were searched from inception to 29 August 2014, using PubMed and Scopus search engines and included RCTs or quasi-experimental designs comparing clinical outcomes between treatments. Data were extracted from original studies. A network meta-analysis was performed by applying weighted regression for continuous outcomes and a mixed-effect Poisson regression for dichotomous outcomes.

Results: Thirty-one of 505 identified studies were eligible. Compared to placebo, glucosamine showed a significant improvement with unstandardized mean differences (UMD) in total WOMAC, pain WOMAC, function WOMAC, and Lequesne score of -2.49 (95% confidence interval (CI) -4.14, -0.83), -0.75 (95% CI: -1.18, -0.32), -4.78 (95% CI: -5.96, -3.59), and -1.03 (95% CI: -1.34, -0.72), respectively. Diacerein clinically improves visual analog scores, function WOMAC, and stiffness WOMAC with UMD values of -2.23 (95% CI: -2.82, -1.64), -6.64 (95% CI: -10.50, -2.78), and -0.68 (95% CI: -1.20, -0.16) when compared to placebo.

Conclusion: The network meta-analysis suggests that diacerein and glucosamine are equally efficacious for symptom relief in knee OA, but that the former has more side effects.

Keywords: Osteoarthritis, Gonarthrosis, Systematic review, Network meta-analysis, SYSADOA

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